SEQUENCE LISTING

<110> Curstedt, Tore
       Johansson, Jan
       Jornvall, Hans
       Robertson, Bengt
       Ventura, Paolo

<120> Artificial peptides having surface activity and the use thereof in the preparation of artificial surfactant

<130> 211596US-3591-4158-0-PCT

<140> PCT/US 09/926009
<141> 2001-08-13

<150> IT MI99A000275
<151> 1999-02-12

<160> 14

<170> PatentIn version 3.1

<210> 1
<211> 101
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> SYNTHETIC PEPTIDE

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> X = Phe and may or may not be present

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X = Gly and may or may not be present

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> X = Ser, Cys, Phe where Ser and Cys are optionally linked bia est
       er or thio-ester bonds with acyl groups containing 12 to 22 carb
       ons atoms linked

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> X = Ser, Cys, Phe where Ser and Cys are optionally linked bia est
       er or thio-ester bonds with acyl groups containing 12 to 22 carb
       ons atoms linked

```
<220>
<221>  MISC_FEATURE
<222>  (13)..(13)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (14)..(14)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (15)..(15)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (16)..(16)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (17)..(17)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (18)..(18)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (19)..(19)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (20)..(20)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (21)..(21)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
```

```
<221>  MISC_FEATURE
<222>  (22)..(22)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (23)..(23)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (24)..(24)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (25)..(25)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (26)..(26)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (27)..(27)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (28)..(28)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (29)..(29)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (30)..(30)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (31)..(31)
<223>  X = Val, Leu, Ile or Nle and may or may not be present
```

```
<220>
<221>  MISC_FEATURE
<222>  (32)..(32)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (34)..(34)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (35)..(35)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (36)..(36)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (37)..(37)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (38)..(38)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (39)..(39)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (40)..(40)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (41)..(41)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
```

```
<221>   MISC_FEATURE
<222>   (42)..(42)
<223>   X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>   MISC_FEATURE
<222>   (43)..(43)
<223>   X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>   MISC_FEATURE
<222>   (44)..(44)
<223>   X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>   MISC_FEATURE
<222>   (45)..(45)
<223>   X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>   MISC_FEATURE
<222>   (46)..(46)
<223>   X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>   MISC_FEATURE
<222>   (47)..(47)
<223>   X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>   MISC_FEATURE
<222>   (48)..(48)
<223>   X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>   MISC_FEATURE
<222>   (49)..(49)
<223>   X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>   MISC_FEATURE
<222>   (50)..(50)
<223>   X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>   MISC_FEATURE
<222>   (51)..(51)
<223>   X = Val, Leu, Ile or Nle and may or may not be present
```

```
<220>
<221>  MISC_FEATURE
<222>  (52)..(52)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (54)..(54)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (55)..(55)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (56)..(56)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (57)..(57)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (58)..(58)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (59)..(59)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (60)..(60)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (61)..(61)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
```

```
<221>  MISC_FEATURE
<222>  (62)..(62)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (63)..(63)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (64)..(64)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (65)..(65)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (66)..(66)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (67)..(67)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (68)..(68)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (69)..(69)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (70)..(70)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (71)..(71)
<223>  X = Val, Leu, Ile or Nle and may or may not be present
```

7

```
<220>
<221>  MISC_FEATURE
<222>  (72)..(72)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (73)..(73)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (74)..(74)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (76)..(76)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (77)..(77)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (78)..(78)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (79)..(79)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (80)..(80)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (81)..(81)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
```

```
<221>  MISC_FEATURE
<222>  (82)..(82)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (83)..(83)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (84)..(84)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (85)..(85)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (86)..(86)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (87)..(87)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (88)..(88)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (89)..(89)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (90)..(90)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (91)..(91)
<223>  X = Val, Leu, Ile or Nle and may or may not be present
```

```
<220>
<221>  MISC_FEATURE
<222>  (92)..(92)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (93)..(93)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (94)..(94)
<223>  X = Val, Leu, Cys, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (95)..(95)
<223>  X = Val, Leu, Ile or Nle and may or may not be present


<220>
<221>  MISC_FEATURE
<222>  (33)..(33)
<223>  X = Ornithine, Lys, Ile, Trp, Phe, Tyr, Gln, or Asn and may or ma
       y not be present


<220>
<221>  MISC_FEATURE
<222>  (53)..(53)
<223>  X = Ornithine, Lys, Ile, Trp, Phe, Tyr, Gln, or Asn and may or ma
       y not be present


<220>
<221>  MISC_FEATURE
<222>  (75)..(75)
<223>  X = Ornithine, Lys, Ile, Trp, Phe, Tyr, Gln, or Asn and may or ma
       y not be present


<220>
<221>  MISC_FEATURE
<222>  (75)..(75)
<223>  X = Ornithine, Lys, Ile, Trp, Phe, Tyr, Gln, or Asn and may or ma
       y not be present


<400>  1

Xaa Xaa Ile Pro Xaa Xaa Pro Val His Leu Lys Arg Xaa Xaa Xaa Xaa
```

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            35   40   45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        50   55   60

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
65   70   75   80

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Ala
                85   90   95

Leu Leu Met Gly Leu
            100

<210>   2
<211>   35
<212>   PRT
<213>   ARTIFICIAL SEQUENCE

<220>
<223>   SYNTHETIC PEPTIDE

<220>
<221>   MISC_FEATURE
<222>   (13)..(13)
<223>   X = Lys or Phe

<220>
<221>   MISC_FEATURE
<222>   (18)..(18)
<223>   X = Lys or Phe

<220>
<221>   MISC_FEATURE
<222>   (23)..(23)
<223>   X = Lys or Phe

<220>
<221>   MISC_FEATURE
<222>   (28)..(28)
<223>   X = Lys or Phe

```
<220>
<221>  MISC_FEATURE
<222>  (14)..(14)
<223>  X = Ley, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (15)..(15)
<223>  X = Ley, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (16)..(16)
<223>  X = Ley, Ile, or Nle.


<220>
<221>  MISC_FEATURE
<222>  (17)..(17)
<223>  X = Ley, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (19)..(19)
<223>  X = Ley, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (20)..(20)
<223>  X = Ley, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (21)..(21)
<223>  X = Ley, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (22)..(22)
<223>  X = Ley, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (24)..(24)
<223>  X = Ley, Ile, or Nle


<220>
```

```
<221>   MISC_FEATURE
<222>   (25)..(25)
<223>   X = Ley, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (26)..(26)
<223>   X = Ley, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (27)..(27)
<223>   X = Ley, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (29)..(29)
<223>   X = Ley, Ile, or Nle


<400>   2

Phe Gly Ile Pro Ser Ser Pro Val His Leu Lys Arg Xaa Xaa Xaa Xaa
1                   5                   10                  15


Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Ala Leu Leu
            20                  25                  30


Met Gly Leu
        35


<210>   3
<211>   35
<212>   PRT
<213>   ARTIFICIAL SEQUENCE

<220>
<223>   SYNTHETIC PEPTIDE

<220>
<221>   MISC_FEATURE
<222>   (18)..(18)
<223>   X = Lys or Phe


<220>
<221>   MISC_FEATURE
<222>   (24)..(24)
<223>   X = Lys or Phe
```

```
<220>
<221>  MISC_FEATURE
<222>  (13)..(13)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (14)..(14)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (15)..(15)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (16)..(16)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (17)..(17)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (19)..(19)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (20)..(20)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (21)..(21)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (22)..(22)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (23)..(23)
```

```
<223>   X = Leu, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (25)..(25)
<223>   X = Leu, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (26)..(26)
<223>   X = Leu, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (27)..(27)
<223>   X = Leu, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (28)..(28)
<223>   X = Leu, Ile, or Nle


<400>   3

Phe Gly Ile Pro Ser Ser Pro Val His Leu Lys Arg Xaa Xaa Xaa Xaa
1               5                   10                  15


Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Ala Leu Leu
            20                  25                  30


Met Gly Leu
        35


<210>   4
<211>   35
<212>   PRT
<213>   ARTIFICIAL SEQUENCE

<220>
<223>   SYNTHETIC PEPTIDE

<220>
<221>   MISC_FEATURE
<222>   (17)..(17)
<223>   X = Lys or Phe


<220>
<221>   MISC_FEATURE
```

```
<222>  (13)..(13)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (14)..(14)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (15)..(15)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (16)..(16)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (18)..(18)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (19)..(19)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (20)..(20)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (21)..(21)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (22)..(22)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (23)..(23)
<223>  X = Leu, Ile, or Nle
```

16

```
<220>
<221>  MISC_FEATURE
<222>  (24)..(24)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (25)..(25)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (26)..(26)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (27)..(27)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (28)..(28)
<223>  X = Leu, Ile, or Nle


<400>  4

Phe Gly Ile Pro Ser Ser Pro Val His Leu Lys Arg Xaa Xaa Xaa Xaa
1                   5                   10                  15


Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Ala Leu Leu
            20                      25                  30


Met Gly Leu
        35


<210>  5
<211>  35
<212>  PRT
<213>  ARTIFICIAL SEQUENCE

<220>
<223>  SYNTHETIC PEPTIDE

<220>
<221>  MISC_FEATURE
<222>  (21)..(21)
<223>  X = Lys or Phe
```

```
<220>
<221>  MISC_FEATURE
<222>  (13)..(13)
<223>  X = Lue, Ile, Nle


<220>
<221>  MISC_FEATURE
<222>  (14)..(14)
<223>  X = Lue, Ile, Nle


<220>
<221>  MISC_FEATURE
<222>  (15)..(15)
<223>  X = Lue, Ile, Nle


<220>
<221>  MISC_FEATURE
<222>  (16)..(16)
<223>  X = Lue, Ile, Nle


<220>
<221>  MISC_FEATURE
<222>  (17)..(17)
<223>  X = Lue, Ile, Nle


<220>
<221>  MISC_FEATURE
<222>  (18)..(18)
<223>  X = Lue, Ile, Nle


<220>
<221>  MISC_FEATURE
<222>  (19)..(19)
<223>  X = Lue, Ile, Nle


<220>
<221>  MISC_FEATURE
<222>  (20)..(20)
<223>  X = Lue, Ile, Nle


<220>
<221>  MISC_FEATURE
<222>  (22)..(22)
<223>  X = Lue, Ile, Nle


<220>
```

```
<221>   MISC_FEATURE
<222>   (23)..(23)
<223>   X = Lue, Ile, Nle


<220>
<221>   MISC_FEATURE
<222>   (24)..(24)
<223>   X = Lue, Ile, Nle


<220>
<221>   MISC_FEATURE
<222>   (25)..(25)
<223>   X = Lue, Ile, Nle


<220>
<221>   MISC_FEATURE
<222>   (26)..(26)
<223>   X = Lue, Ile, Nle


<220>
<221>   MISC_FEATURE
<222>   (27)..(27)
<223>   X = Lue, Ile, Nle


<220>
<221>   MISC_FEATURE
<222>   (28)..(28)
<223>   X = Lue, Ile, Nle


<400>   5

Phe Gly Ile Pro Ser Ser Pro Val His Leu Lys Arg Xaa Xaa Xaa Xaa
1               5                   10          15


Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Ala Leu Leu
            20                  25                  30


Met Gly Leu
        35


<210>   6
<211>   35
<212>   PRT
<213>   ARTIFICIAL SEQUENCE

<220>
<223>   SYNTHETIC PEPTIDE
```

19

```
<220>
<221>  MISC_FEATURE
<222>  (24)..(24)
<223>  X = Lys or Phe


<220>
<221>  MISC_FEATURE
<222>  (13)..(13)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (14)..(14)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (15)..(15)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (16)..(16)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (17)..(17)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (18)..(18)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (19)..(19)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (20)..(20)
<223>  X = Leu, Ile, or Nle


<220>
<221>  MISC_FEATURE
<222>  (21)..(21)
```

```
<223>   X = Leu, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (22)..(22)
<223>   X = Leu, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (23)..(23)
<223>   X = Leu, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (25)..(25)
<223>   X = Leu, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (26)..(26)
<223>   X = Leu, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (27)..(27)
<223>   X = Leu, Ile, or Nle


<220>
<221>   MISC_FEATURE
<222>   (28)..(28)
<223>   X = Leu, Ile, or Nle


<400>   6

Phe Gly Ile Pro Ser Ser Pro Val His Leu Lys Arg Xaa Xaa Xaa Xaa
1                   5                   10                  15


Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Ala Leu Leu
            20                  25                  30


Met Gly Leu
        35


<210>   7
<211>   35
<212>   PRT
<213>   ARTIFICIAL SEQUENCE
```

21

<220>
<223> SYNTHETIC PEPTIDE

<400> 7

Phe Gly Ile Pro Ser Ser Pro Val His Leu Lys Arg Leu Leu Ile Leu
1   5   10   15

Lys Leu Leu Leu Leu Lys Ile Leu Leu Leu Lys Leu Gly Ala Leu Leu
            20   25   30

Met Gly Leu
        35

<210> 8
<211> 35
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> SYNTHEIC PEPTIDE

<400> 8

Phe Gly Ile Pro Ser Ser Pro Val His Leu Lys Arg Leu Leu Ile Leu
1   5   10   15

Leu Lys Leu Leu Leu Leu Ile Lys Leu Leu Ile Leu Gly Ala Leu Leu
            20   25   30

Met Gly Leu
        35

<210> 9
<211> 35
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> SYNTHETIC PEPTIDE

<400> 9

Phe Gly Ile Pro Ser Ser Pro Val His Leu Lys Arg Leu Leu Ile Leu
1   5   10   15

Lys Leu Leu Leu Leu Leu Ile Leu Leu Leu Ile Leu Gly Ala Leu Leu
            20   25   30

22

```
Met Gly Leu
        35


<210>  10
<211>  35
<212>  PRT
<213>  ARTIFICIAL SEQUENCE

<220>
<223>  SYNTHETIC PEPTIDE

<400>  10

Phe Gly Ile Pro Ser Ser Pro Val His Leu Lys Arg Leu Leu Ile Leu
1               5                   10                  15


Leu Leu Leu Leu Lys Leu Ile Leu Leu Leu Ile Leu Gly Ala Leu Leu
                20                  25                  30


Met Gly Leu
        35


<210>  11
<211>  35
<212>  PRT
<213>  ARTIFICIAL SEQUENCE

<220>
<223>  SYNTHETIC PEPTIDE

<400>  11

Phe Gly Ile Pro Ser Ser Pro Val His Leu Lys Arg Leu Leu Ile Leu
1               5                   10                  15


Leu Leu Leu Leu Leu Leu Ile Lys Leu Leu Ile Leu Gly Ala Leu Leu
                20                  25                  30


Met Gly Leu
        35


<210>  12
<211>  35
<212>  PRT
<213>  ARTIFICIAL SEQUENCE

<220>
<223>  SYNTHETIC PEPTIDE
```

23

<400> 12

Phe Gly Ile Pro Ser Ser Pro Val His Leu Lys Arg Leu Leu Ile Leu
1   5   10   15

Phe Leu Leu Leu Leu Phe Ile Leu Leu Leu Phe Leu Gly Ala Leu Leu
                20   25   30

Met Gly Leu
        35

<210> 13
<211> 35
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> SYNTHETIC PEPTIDE

<400> 13

Phe Gly Ile Pro Cys Cys Pro Val His Leu Lys Arg Leu Leu Ile Val
1   5   10   15

Val Val Val Val Val Leu Ile Val Val Val Ile Val Gly Gln Leu Leu
                20   25   30

Met Gly Leu
        35

<210> 14
<211> 34
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> SYNTHETIC PEPTIDE

<400> 14

Phe Gly Ile Pro Ser Ser Pro Val Leu Lys Arg Leu Leu Ile Leu Leu
1   5   10   15

Leu Leu Leu Leu Leu Ile Leu Leu Leu Ile Leu Gly Ala Leu Leu Met
                20   25   30

Gly Leu